

CLAIMS

1. An antibody fragment of the monomeric scFv type obtained from the RNA extracted from the hybridoma producing Mab CB/ior-CEA.1, that is specific for human carcinoembryonic antigen (CEA) either in soluble form, adsorbed to solid surfaces, or present in cells, and shows an affinity constant for CEA of $(5.0 \pm 0.4) \times 10^9 \text{ L mol}^{-1}$ and a recognition for such antigen dependent on the conservation of its glycosylation.
2. An antibody fragment of the monomeric scFv type according to claim 1, characterized in that its aminoacid sequence is that referred in SEQ ID No 16.
3. An antibody fragment of the divalent (diabody) scFv type obtained from the RNA extracted from the hybridoma producing Mab CB/ior-CEA.1, that is specific for human carcinoembryonic antigen (CEA) either in soluble form, adsorbed to solid surfaces, or present in cells, and shows an affinity constant for CEA of $(2.8 \pm 0.3) \times 10^{10} \text{ L mol}^{-1}$ and a recognition for such antigen dependent on the conservation of its glycosylation.
4. An antibody fragment of the divalent (diabody) scFv type according to claim 3, characterized in that its aminoacid sequence is that referred in SEQ ID No 17.
5. Antibody fragments according to claims 1 to 4 characterized in that they are employed for the identification of tumor cells that express human CEA.
6. Recombinant or synthetic recombinant antibodies specific for human CEA characterized in that they comprise the aminoacidic sequences of the variable domains VH and VL reported in SEQ ID 16 and SEQ ID 17, linked artificially in the form of Fab fragments and other scFv variants, bispecific antibodies, or fused to biologically or biochemically active domains.
7. Antibody fragments according to claims 1 to 6 characterized in that they are produced in recombinant bacteria or yeast, in insect or mammalian transfected cells, or in genetically modified organisms.
8. Antibody fragments according to claims 1 to 7 characterized in that they additionally contain a radioactive label or detectable by other method, or a chemical or biological agent with antitumor potential.
9. Pharmaceutical composition that contains antibody fragments according to claims 1 to 8, for the treatment of human tumors that express CEA.
10. Pharmaceutical composition that contains antibody fragments according to claims 1 to 8, for the in vivo radiolocalization of human tumors that express CEA, using imaging techniques.
11. Reagent for the *in vitro* or *ex vivo* diagnosis that contains antibody fragments according to claims 1 to 8, for the detection of human CEA, linked or not to cells.

12. Cells that express antibody fragments according to claims 1 to 8, obtained through genetic manipulation by way of recombinant DNA, being these cells bacteria, yeast, insect cells, mammalian cells, or plant cells.
- 5 13. Multicellular organisms that express antibody fragments according to claims 1 to 8, obtained through genetic manipulation by way of recombinant DNA, being these organisms transgenic animal or transgenic plants.
14. Vectors that encode for antibody fragments according to claims 1 to 8, obtained through genetic manipulation by way of recombinant DNA, being these vectors plasmids or sequences able to integrate in host cells.